

What is claimed is:

[Claim 1] 1. An organic electro-luminescent display panel, comprising:
an organic electro-luminescent device layer, on a substrate;
a first barrier layer, disposed over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer; and
a second barrier layer, disposed over the substrate covering the first barrier layer and the organic electro-luminescent device layer.

[Claim 2] 2. The organic electro-luminescent display panel according to claim 1, wherein the first barrier layer is an organic layer.

[Claim 3] 3. The organic electro-luminescent display panel according to claim 2, wherein the organic layer is selected from the group consisting of acrylic, methacrylic, polyester, polyethyleneterephthalate, polyethylene, polypropylene and a combination thereof.

[Claim 4] 4. The organic electro-luminescent display panel according to claim 1, wherein the first barrier layer has a thickness in a range of about 150~300 μ m.

[Claim 5] 5. The organic electro-luminescent display panel according to claim 1, wherein the first barrier layer is an inorganic layer.

[Claim 6] 6. The organic electro-luminescent display panel according to claim 5, wherein the inorganic layer is selected from the group consisting of oxide, nitride, carbonate, oxynitride and a combination thereof.

[Claim 7] 7. The organic electro-luminescent display panel according to claim 6, wherein the oxide is selected from the group consisting of silicon oxide, aluminum oxide, titanium oxide, indium oxide, tin oxide, indium tin oxide and a combination thereof.

[Claim 8] 8. The organic electro-luminescent display panel according to claim 6, wherein the nitride is selected from the group consisting of aluminum nitride, silicon nitride and a combination thereof.

[Claim 9] 9. The organic electro-luminescent display panel according to claim 1, wherein the second barrier layer is a multiple layer.

[Claim 10] 10. The organic electro-luminescent display panel according to claim 1, wherein the second barrier layer has a thickness in a range of about 1~5 μ m.

[Claim 11] 11. The organic electro-luminescent display panel according to claim 1, further comprising:

a first sealant, disposed between the substrate and the first barrier layer so as to encapsulate the organic electro-luminescent device layer between the substrate and the first barrier layer.

[Claim 12] 12. The organic electro-luminescent display panel according to claim 1, further comprising:

a cap, disposed above the substrate; and
a second sealant, disposed between the cap and the substrate so as to encapsulate the organic electro-luminescent device layer, the first barrier layer and the second barrier layer between the substrate and the cap.

[Claim 13] 13. The organic electro-luminescent display panel according to claim 1, wherein the organic electro-luminescent device layer is an active matrix organic electro-luminescent device layer or a passive organic electro-luminescent device layer.

[Claim 14] 14. A method of fabricating an organic electro-luminescent display panel, comprising:

forming an organic electro-luminescent device layer over a substrate;
forming a first barrier layer over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer; and

forming a second barrier layer over the substrate covering the first barrier layer and the organic electro-luminescent device layer.

[Claim 15] 15. The method of fabricating an organic electro-luminescent display panel according to claim 14, wherein the step of forming the first barrier layer over the organic electro-luminescent device layer comprises:

forming a first sealant on the substrate surrounding the organic electro-luminescent device layer;

disposing the first barrier layer over the substrate, wherein the first barrier layer is contact with the first sealant; and

curing the first sealant so as to encapsulate the organic electro-luminescent device layer between the substrate and the first barrier layer.

[Claim 16] 16. The method of fabricating an organic electro-luminescent display panel according to claim 14, wherein the step of forming the second barrier layer comprises performing a deposition process.

[Claim 17] 17. The method of fabricating an organic electro-luminescent display panel according to claim 14, further comprising a step of forming a cap over the substrate after the step of forming the second barrier layer.

[Claim 18] 18. The method of fabricating an organic electro-luminescent display panel according to claim 17, wherein the step of forming the cap over the substrate comprises:

forming a second sealant on the substrate;

disposing the cap over the substrate, wherein the cap is contact with the second sealant; and

curing the second sealant so as to encapsulate the organic electro-luminescent device layer, the first barrier layer and the second barrier layer between the substrate and the cap.